

REMARKS

Reconsideration of the subject application is requested in view of the foregoing amendment and the following remarks.

Claims 1-41 are pending, of which claims 34-41 stand withdrawn.

In this paper, claim 4 is amended to correct a readily discernible typographical error in dependency. More specifically, the error was discovered as a result of the Office action pointing out an antecedent-basis issue. Hence, the amendment was made, but it was not made for prior art reasons and does not represent or result in any narrowing of equivalents according to the *Festo* line of cases and their progeny cases. Also, the amendment inherently does not present a new combination that was not previously examined.

As a result of this amendment, "the reflux vent" has antecedent basis. Withdrawal of the rejection of claims 4-5 under 35 U.S.C. §112, second paragraph, is proper and hereby requested.

The allowance of claims 6-23 and 26-33 is acknowledged with thanks.

Claims 1-5 and 24-25 stand rejected for alleged obviousness from Sen or Brown in view of Albers or Glezer. This rejection is traversed.

Independent claim 1 is directed to combination of the following features of a distillation pot in a distillation system:

- (1) walls, including a heated wall, and a cover that collectively define an interior space,
- (2) the interior space is configured to contain a liquid in the interior space as the liquid is being heated in the pot for a distillation purpose,
- (3) the walls and cover have respective inside surfaces,
- (4) a plate is configured and situated in the interior space so as to divide the space into an upper portion and a lower portion,
- (5) the upper and lower portions hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate,
- (6) a thermally conductive member extends from a location on an inside surface of a wall into the liquid,
- (7) the thermally conductive member is configured so as to be contacted by the liquid whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed,

(8) the thermally conductive member extends into the lower fluid passageway so as to contact and be at the temperature of the liquid passing through the lower fluid passageway,

(9) as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid passageway to the upper portion, and from the upper portion through the lower fluid passageway past the thermally conductive member to the lower portion.

Independent claim 24 is directed to a combination of the following features of a distillation pot in a distillation system; these features parallel corresponding features recited in claim 1:

(1) wall means, including heated wall means, and cover means that collectively define an enclosed interior space,

(2) the interior space contains a liquid as the liquid is being heated in the pot for a distillation purpose,

(3) the wall means and cover means have respective inside surfaces;

(4) an interior-space-dividing means for dividing the interior space into an upper portion and a lower portion,

(5) the upper portion and lower portion hydraulically communicate with each other by an upper fluid-passageway means and a lower fluid-passageway means,

(6) a thermal-conduction means that extends from a location on an inside surface of a wall means into the liquid,

(7) the thermal-conduction means is configured so as to be contacted by the liquid whenever liquid is in the interior space and is being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall means, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed,

(8) the thermal-conduction means extends into the lower portion and lower fluid-passageway means so as to contact and be at the temperature of the liquid passing through the lower fluid-passageway means,

(9) as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid-passageway means to the upper portion, and from the upper portion through the lower fluid-passageway means past the thermal-conduction means to the lower portion.

Independent claim 25 is directed to a distillation system that comprises a distillation pot having features similar to those recited in claim 1. The subject system also includes a condensing unit that is situated relative to the pot so as to receive vapor produced by heating of the liquid in the pot and configured to condense the vapor to a corresponding liquid.

The Office action contends that "Sen or Brown discloses substantially the features of the apparatus as claimed." This contention is traversed.

The Office action specifically points to FIG. 4 and col. 11, lines 38-53, of Brown as allegedly disclosing said features. This contention is incorrect and unfounded.

Brown is not understood to teach or suggest features (2), above. The text of Brown cited in the Office action refers to the "evaporation chamber" 12 (item 112 in FIG. 4). The Brown evaporation chambers 12, 112 do not contain a liquid. Rather, the chambers 12, 112 contain a packing material 14, 114 through which liquid and vapor flow downward and exit the chambers 12, 112 via outlet tubes (see FIG. 1, showing drainage of concentrated water from the chamber 12 via tubes 27). Beneath the chambers 12, 112 is a separation chamber (see item 104 in FIG. 4). But, the separation chamber does not heat liquid and thus does not contain liquid while the liquid is being heated for any purpose. Heating takes place elsewhere in the Brown apparatus.

Brown is not understood to teach or suggest features (4), above. Neither chamber 12, 112 defines an interior space in which a plate is situated and configured to divide the interior space into an upper portion and a lower portion. Even a cursory review of FIGS. 1 and 4 fails to reveal such a plate in either item 12 or item 112, and Brown provides no suggestion of a need for such a plate or how such a plate would be configured or situated in the Brown apparatus. Furthermore, a cursory review of FIGS. 1 and 4 clearly reveals that neither chamber 12, 112 is divided in the claimed manner by any means.

Brown is not understood to teach or suggest features (5), above. Since there is no plate in Brown, as stated above, there is no plate that defines an upper and a lower fluid passageway in the manner claimed, and hence there is no teaching or suggestion in Brown of the claimed upper and lower fluid passageways.

Brown is not understood to teach or suggest features (6), above, as admitted on page 2 of the Office action.

Brown is not understood to teach or suggest features (7), above, as admitted on page 2 of the Office action.

Brown is not understood to teach or suggest features (8), above, in view of the lack of any teaching or suggestion of features (6)-(7).

Brown is not understood to teach or suggest features (9), above. Since neither chamber 12, 112 provides an upper and lower chamber as claimed, liquid does not circulate in the Brown apparatus in the manner claimed. Rather, in the Brown apparatus, liquid and vapor flow downward in the chambers 12, 112, and thus inherently cannot flow in the manner claimed. Furthermore, since Brown fails to teach or suggest features (6)-(8), the reference inherently fails to teach or suggest flow of liquid from an upper portion through a lower fluid passageway past a thermally conductive member to the lower portion.

Therefore, Brown fails to teach or suggest at least seven of the features recited in each of claims 1, 24, and 25. The text (col. 11, lines 39-54) of Brown cited in the Office action does not show or establish otherwise. For example, the text states, "Thus the invention contemplates an embodiment wherein the heated unevaporated liquid exiting the lower portions of evaporation chamber or column 12 is moved to the upper portions of a second chamber where it moves in descending film fashion in counterflow relationship with an ascending gas. . . ." This text refers to, for example, FIG. 1 of Brown, the limitations of which are discussed above. The "evaporation chamber" referred to in the text specifically is item 12, which is discussed above. The text also refers to a "second chamber" understood to be the condensing chamber 18. But, the chamber 18 is not part of the chamber 12, and is not constructed relative to the chamber 12 in the manner claimed. For example, the chambers 12 and 18 are not the claimed "upper" and "lower" chambers. The chambers 12 and 18 are not divided from each other by a plate as claimed, and whatever plates are present do not have or define the claimed upper and lower fluid passageways. The rest of the cited text does not fulfill the shortcomings of the portion of text discussed above.

Therefore, claim 1 and its dependents, as well as claims 24 and 25, are properly allowable over Brown.

Sen is directed to an apparatus for contacting a flow of gas (fluid) with a liquid. The Office action refers to FIG. 1 and the claims (cols. 10-14) of Sen. It is first pointed out that any liquid contained in Sen's FIG. 1 apparatus is not for a "distillation" purpose. In fact, Sen merely

discusses an apparatus for producing a liquid film, which does not pertain to distillation. Thus, Sen does not, and cannot, render obvious all innovations in distillation apparatus or components thereof. It is secondly pointed out that Sen is not understood to teach or suggest a heated wall; thus this reference fails to teach or suggest features (1). It is thirdly pointed out that Sen is not understood to teach or suggest features (5), in that there is no teaching or suggestion of the claimed plate that defines the claimed upper and lower fluid passageways. The slits 7 certainly are not the claimed upper and lower fluid passageways. It is fourthly pointed out that Sen does not teach or suggest features (6), as admitted in the Office action. It is fifthly pointed out that Sen does not teach or suggest features (7), as admitted in the Office action. It is sixthly pointed out that Sen, in view of its shortcomings relative to features (6) and (7), cannot possibly teach or suggest features (8). It is seventhly pointed out that, since Sen does not teach or suggest heating the liquid in the Sen chamber, the reference inherently fails to teach or suggest features (9).

Therefore, claim 1 and its dependents, as well as claims 24 and 25, are properly allowable over Sen.

The Albers and Glezer references were cited for their alleged suggestions of the claimed thermoconductive element. Not only is this contention incorrect, but even if these references made such a disclosure, they would fall far short of satisfying the other deficiencies of either Brown or Sen.

The Office action specifically refers to the abstract and col. 6, lines 56-63, of Glezer as allegedly supporting the rejection. This "support" simply does not exist. The abstract mentions, "The heat contained in the heated body is moved into at least one of these channel walls" Applicant queries, "So what?" This is simply a statement of an aspect of thermal conduction. This mention of thermal conduction does not, and cannot, render obvious all innovations in distillation apparatus and components thereof. The remainder of the abstract summarizes a "synthetic jet actuator" which has nothing to do with distillation, distillation pots, or anything else concerning distillation, and thus has nothing to do with the subject claims. Col. 6, lines 56-63, mention that "at least one wall 85 of the duct 83 is heated. In fact, the wall of this exemplary channel comprises a heat spreading thermally conductive material, such as a metallic material." Again, this is merely a statement of thermal conduction. There is no conceivable way in which this statement can disclose, suggest, motivate, hint or provide any other "support" for, e.g., features (6)-(8) listed above, either alone or in combination with any of features (1)-(5) and (9).

The Office action specifically points to col. 9, lines 54-67, through col. 10, lines 1-64, of Albers. In reply, Applicant first points out that this somewhat "blanket" citation left Applicant guessing as to the specific disclosure in this text that allegedly provided "support" for the rejection. Substantially all of the cited text pertains to various features of an Albers heat exchanger. Clarification is proper and hereby requested.

It is also pointed out that Albers has nothing to do with distillation or with components of distillation apparatus, so its alleged relevance to the subject claims is not understood. Albers does not, and cannot, render obvious all innovation in distillation components, and the "advantages" mentioned on page 3, lines 3-10, of the Office action do not establish otherwise.

The Office action specifically points to the Albers abstract and col. 6, lines 56-62. The abstract mentions, "A forced temperature differential in each chamber causes heat transfer between chambers by means of thermally conductive partitions." Again, this is merely a statement of an aspect of thermal conduction between chambers of a particular type of apparatus (not a distillation apparatus or component), and this statement does not, and cannot, provide any reasonable basis for the subject rejection. Similarly, col. 6, lines 56-62 states that "an increased partition area can be supplied by thermally connected partitions that are external to the chambers." Again, this is a statement of an aspect of thermal conduction that does not, and cannot, render obvious the subject claims.

Therefore, claim 1 and its dependents, as well as claims 24 and 25, are properly allowable over any conceivable combination of the cited references. Withdrawal of the rejection is proper and hereby requested.

In view of the allowability of claim 1, claims 2-5 that depend from claim 1 are properly allowable for all the reasons discussed above pertaining to claim 1 and for the additional reason that each of these dependent claims adds at least one more respective feature to the combination set forth in claim 1, and hence is patentable in its own right over the cited references.

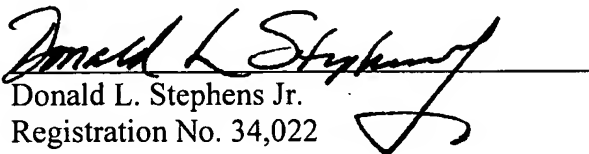
Therefore, claims 1-33 are in condition for allowance, and early action to such end is requested.

As requested already in Applicant's prior Response, if any issues remain after consideration and entry of this paper, the Examiner is requested to contact the undersigned to schedule a telephonic interview, to which Applicant has a right.

Respectfully submitted,

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